

Fig. 1(a)

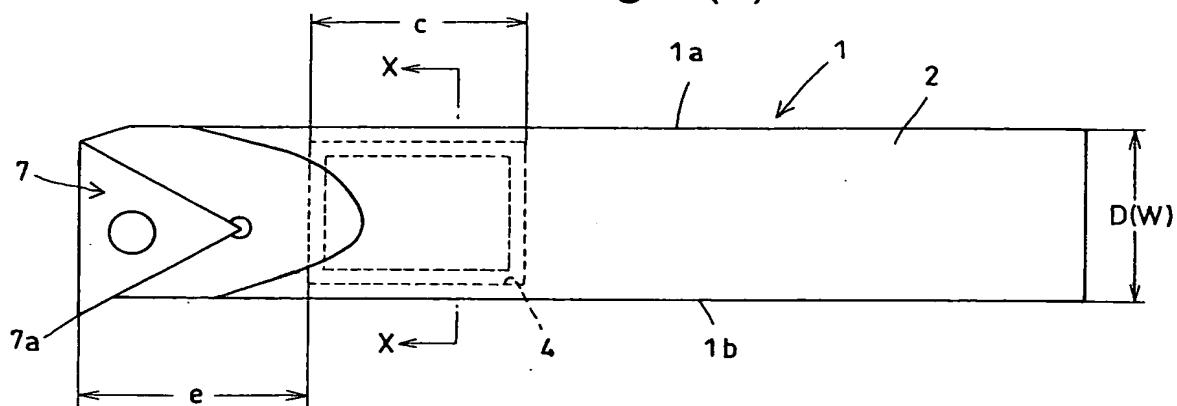


Fig. 1(b)

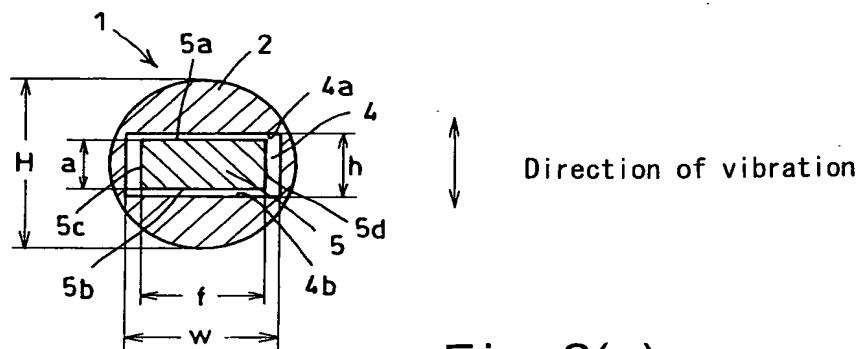


Fig.2(a)

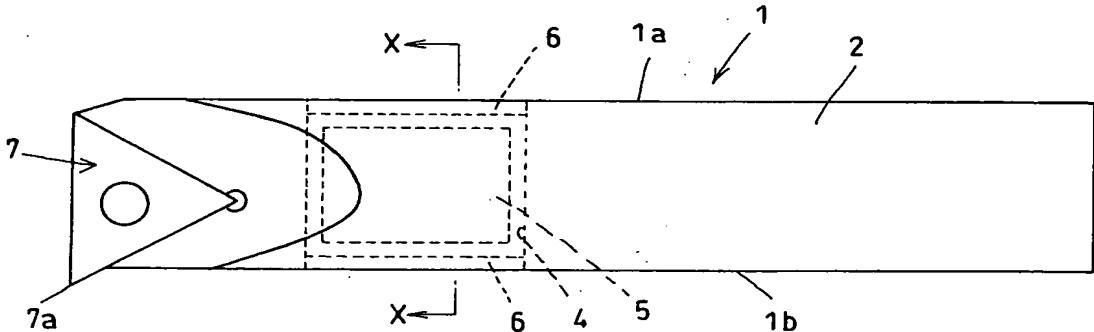


Fig.2(b)

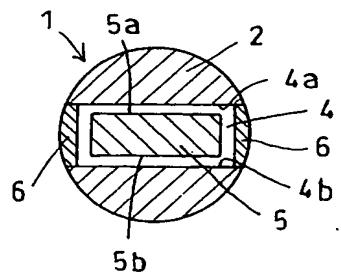


Fig.3(a)

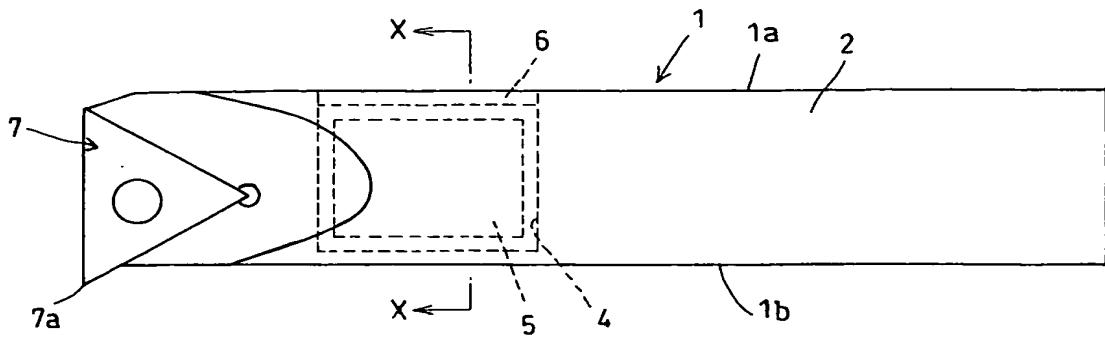


Fig.3(b)

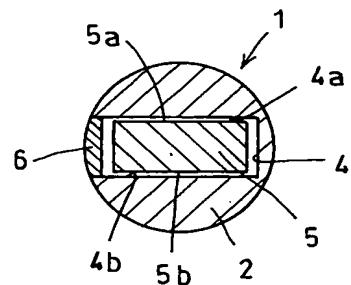


Fig.4(a)

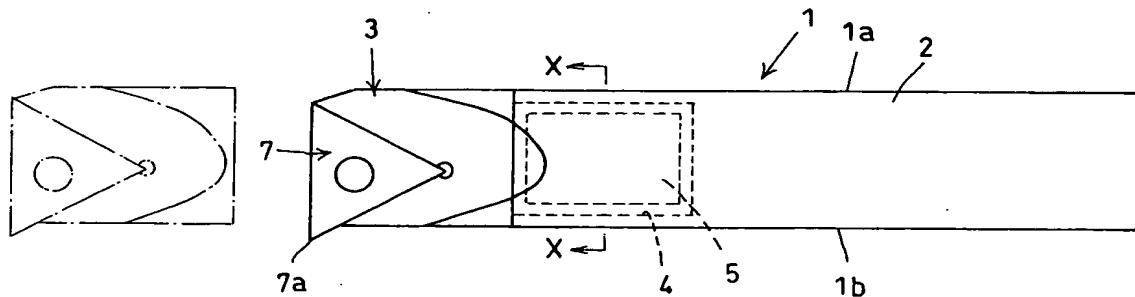


Fig.4(b)

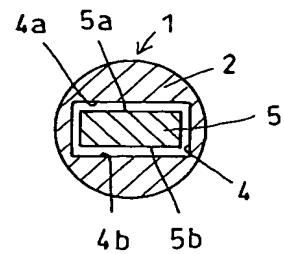


Fig.5(a)

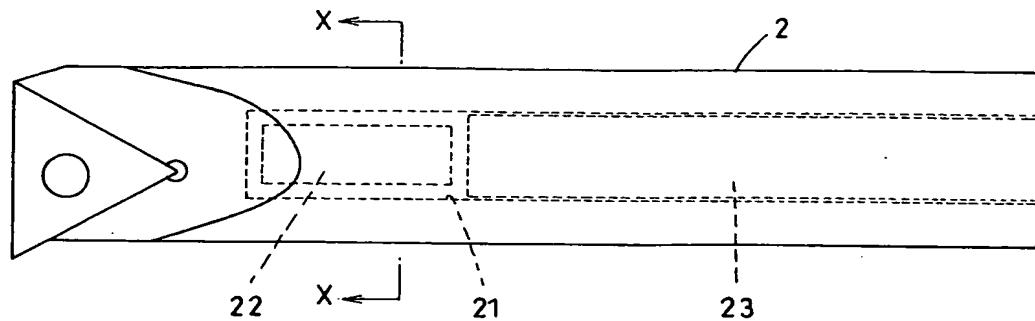


Fig.5(b)

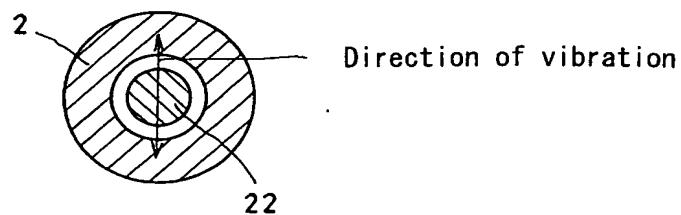


Fig.6(a)

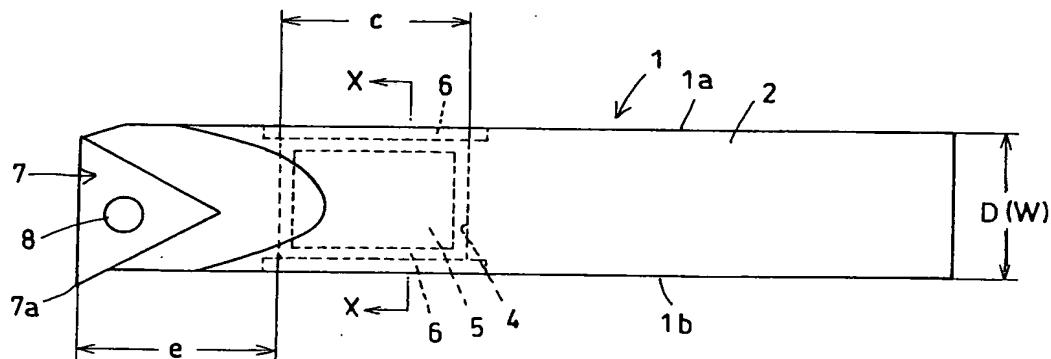


Fig.6(b)

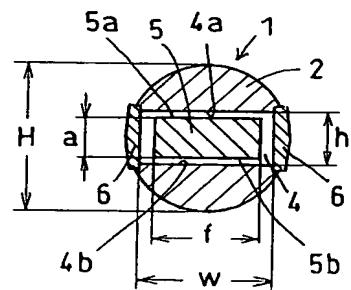


Fig.7(a)

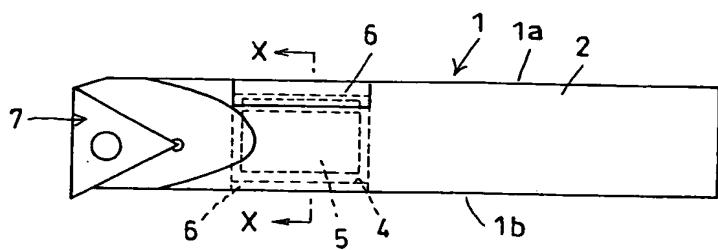


Fig.7(b)

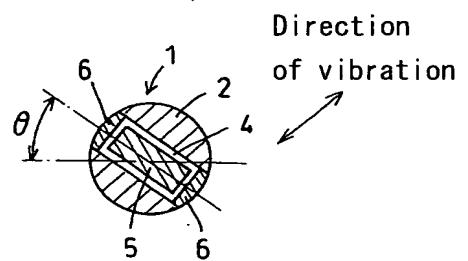


Fig.8(a)

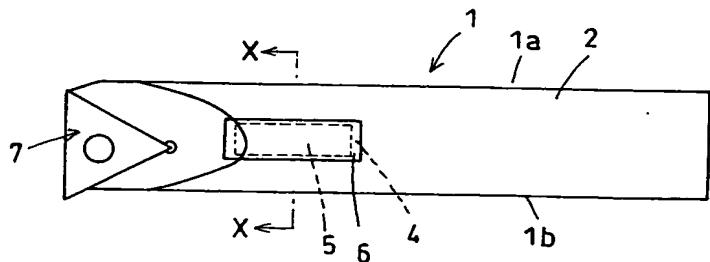


Fig.8(b)

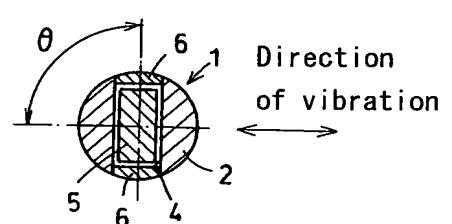


Fig.9(a)

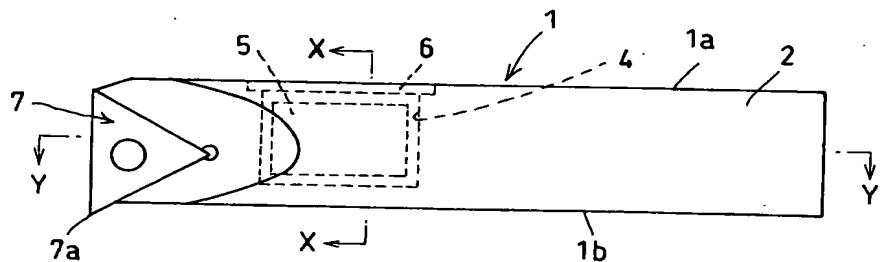


Fig.9(b)

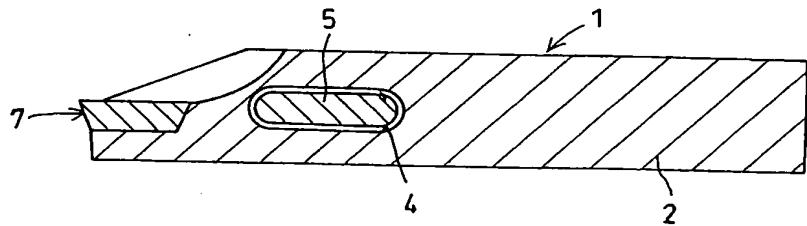


Fig.9(c)

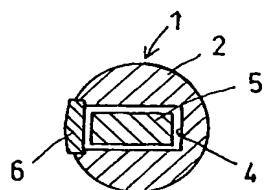


Fig.10

| | A | B | C | D |
|--|-----|-----|-----|-----|
| X-X sectional shape | | | | |
| Amount of deflection based on 100 of steel shank | 140 | 109 | 135 | 135 |

Fig.11

| | Shape of pocket | | Weight | | |
|----------------------------|---------------------------------------|--------|----------|------------------|------------------|
| | w (mm) | h (mm) | h-a (mm) | Material | Specific gravity |
| Example 1 of the invention | 8 | 3 | 0.1 | Cemented carbide | 15.1 |
| Example 2 of the invention | 8 | 3 | 0.05 | Cemented carbide | 15.1 |
| Example 3 of the invention | 8 | 3 | 0.15 | Heavy metal | 18.2 |
| Example 4 of the invention | 8 | 3 | 0.15 | Steel | 7.8 |
| Example 5 of the invention | 8 | 3 | 0.3 | Cemented carbide | 15.1 |
| Example 6 of the invention | 8 | 3 | 0.5 | Cemented carbide | 15.1 |
| Comparative Example 1 | 4 | 3 | 0.15 | Cemented carbide | 15.1 |
| Comparative Example 2 | 8 | 3 | 0 | Cemented carbide | 15.1 |
| Comparative Example 3 | 8 | 3 | 1.5 | Cemented carbide | 15.1 |
| Comparative Example 4 | Holder with steel shank | | | | |
| Comparative Example 5 | Holder with shank of cemented carbide | | | | |

Fig.12

| Protrusion mm | 48 | | 60 | | 72 | | 84 | |
|----------------------------|----|-----|----|-----|----|-----|----|-----|
| Cutting speed m/min | 80 | 160 | 80 | 160 | 80 | 160 | 80 | 160 |
| Example 1 of the invention | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Example 2 of the invention | ○ | ○ | ○ | ○ | ○ | × | × | × |
| Example 3 of the invention | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Example 4 of the invention | ○ | ○ | ○ | ○ | ○ | × | × | × |
| Example 5 of the invention | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Example 6 of the invention | ○ | ○ | ○ | ○ | ○ | ○ | × | × |
| Comparative Example 1 | ○ | ○ | × | × | × | × | × | × |
| Comparative Example 2 | ○ | ○ | × | × | × | × | × | × |
| Comparative Example 3 | ○ | × | × | × | × | × | × | × |
| Comparative Example 4 | ○ | ○ | × | × | × | × | × | × |
| Comparative Example 5 | ○ | ○ | ○ | ○ | ○ | × | × | × |

Fig.13

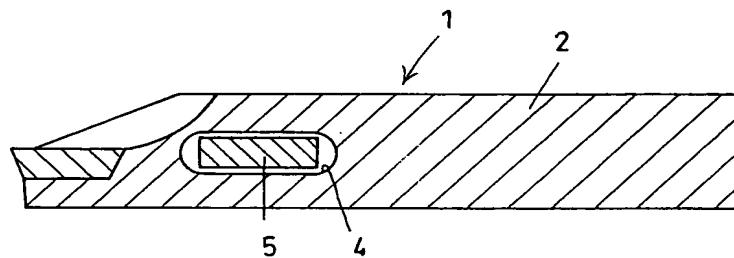


Fig.14(a)

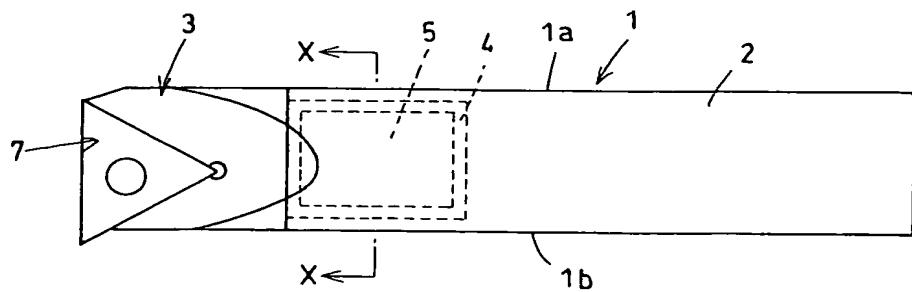


Fig.14(b)

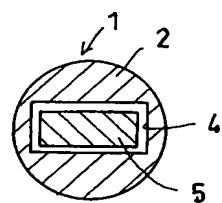


Fig.15(a)

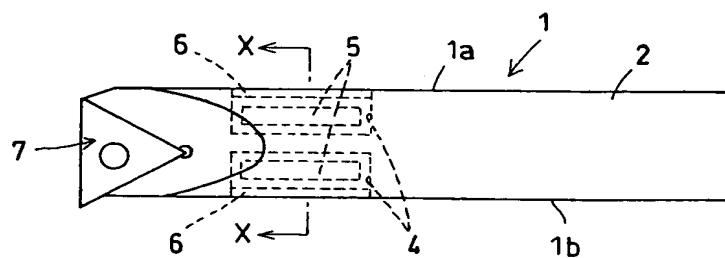


Fig.15(b)

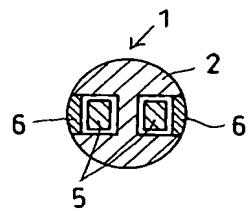


Fig.16

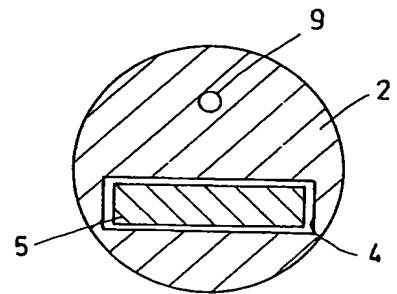


Fig.17(a)

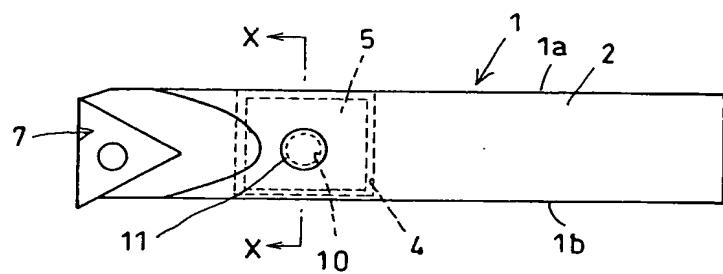


Fig.17(b)

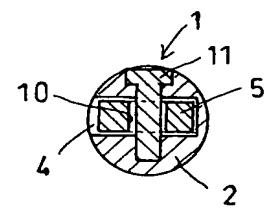


Fig.18(a)

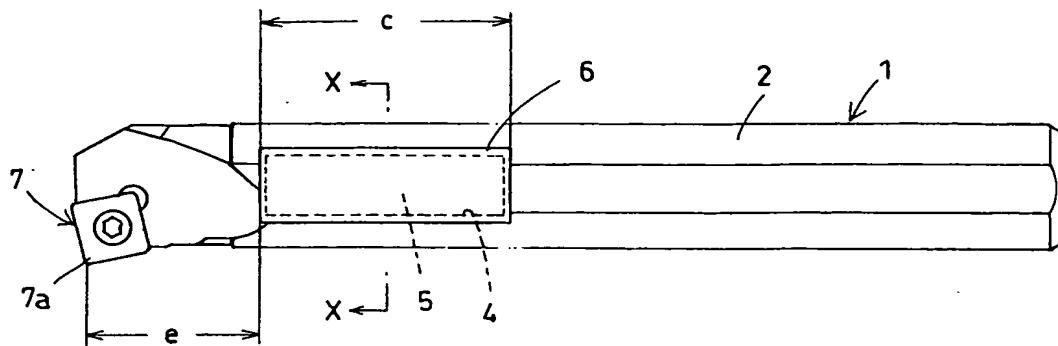


Fig.18(b)

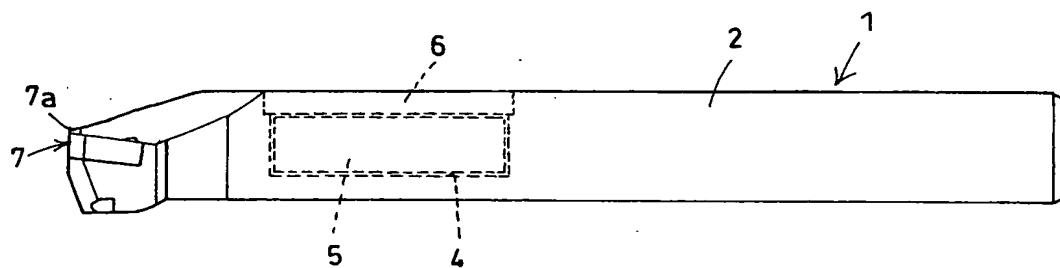


Fig.18(c)

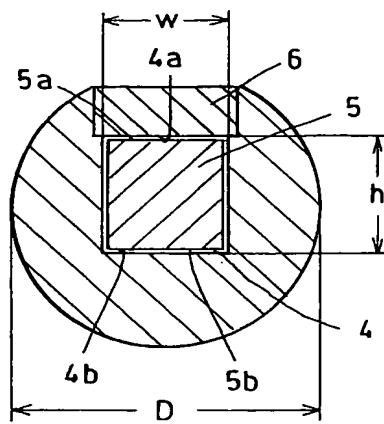


Fig. 19(a)

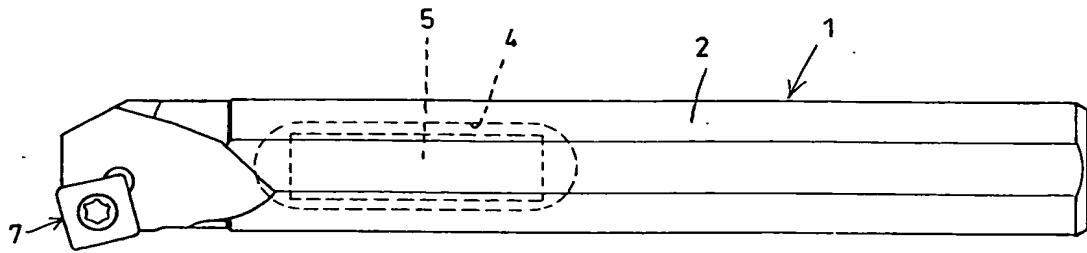


Fig. 19(b)

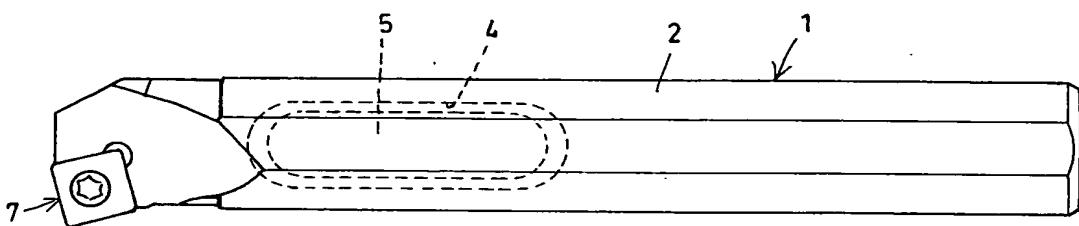


Fig. 19(c)

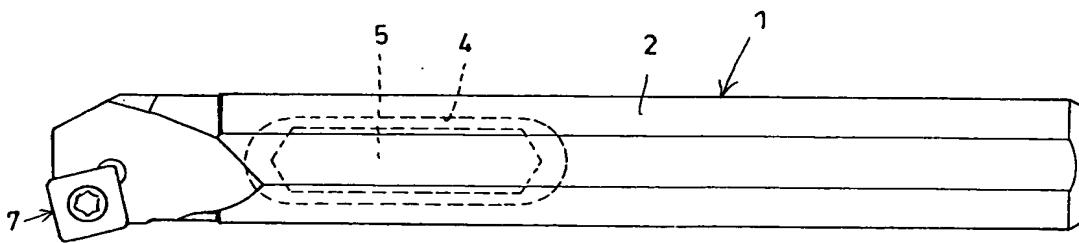


Fig.20(a)

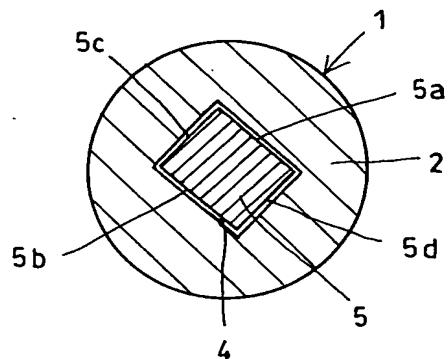


Fig.20(b)

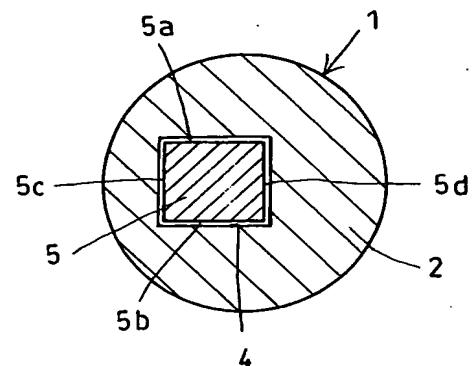


Fig.21

| | Size of pocket | | Result of cutting | |
|----------------------------|----------------|-------------|----------------------|----------------------|
| | Width (mm) | Height (mm) | Cutting conditions 1 | Cutting conditions 2 |
| Example 1 of the invention | 5 | 5 | ○ | ○ |
| Example 2 of the invention | 8 | 7 | ○ | ○ |
| Comparative Example 1 | 3 | 3 | × | × |
| Comparative Example 2 | 12 | 4 | ○ | × |
| Comparative Example 3 | Steel shank | | × | × |

Fig.22(a)

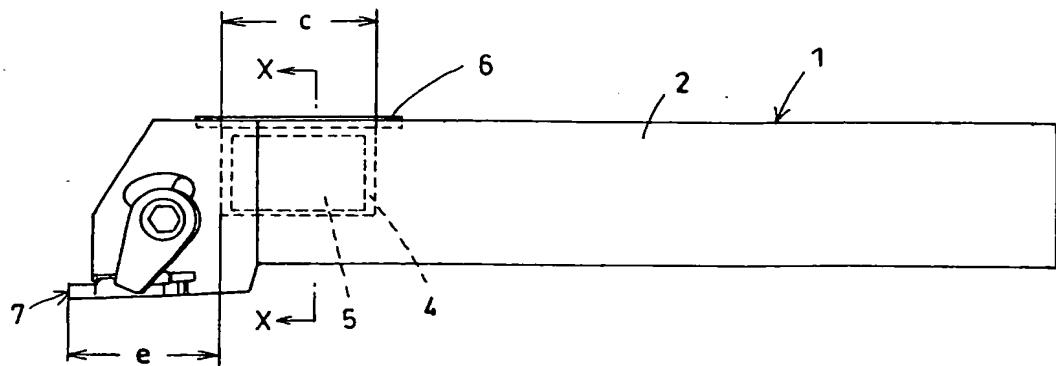


Fig.22(b)

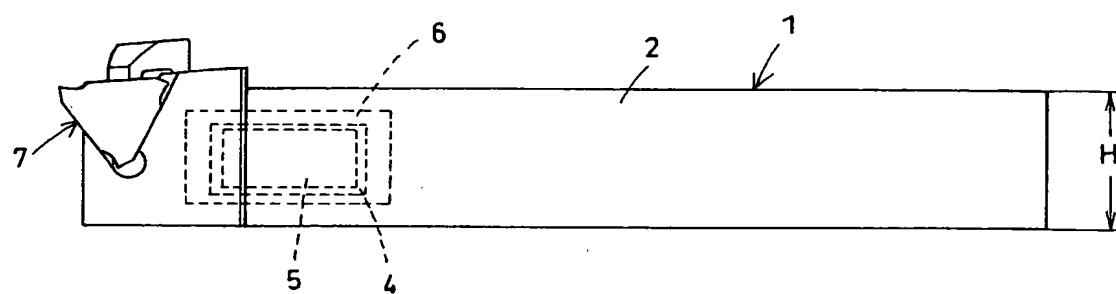


Fig.22(c)

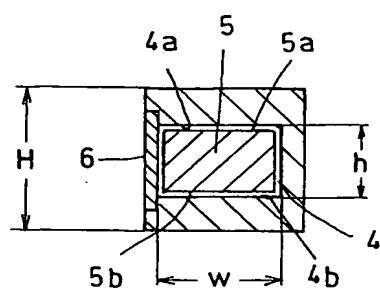


Fig.23(a)

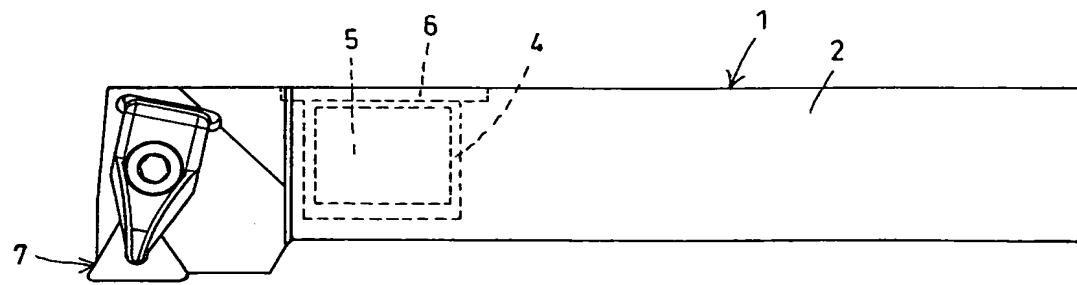


Fig.23(b)

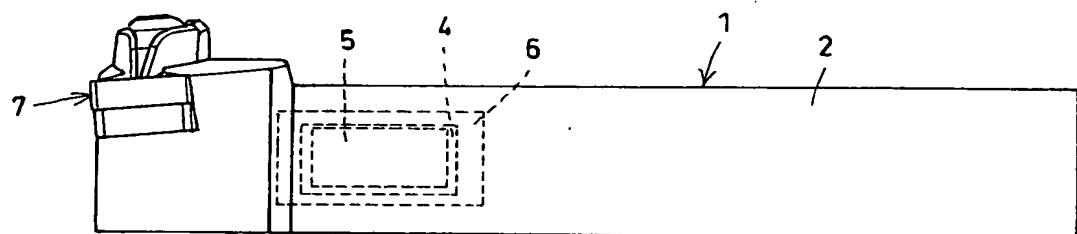


Fig.24(a)

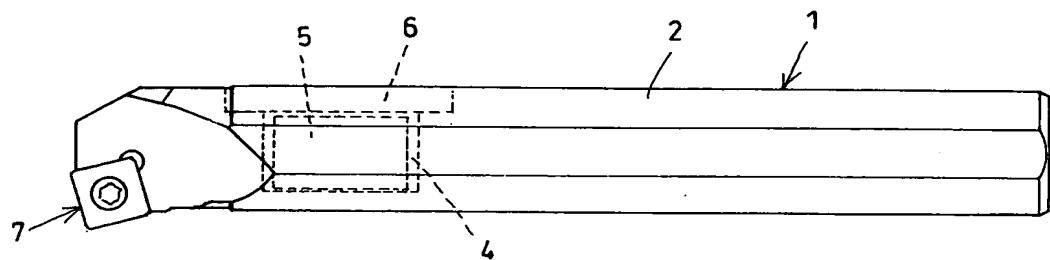


Fig.24(b)

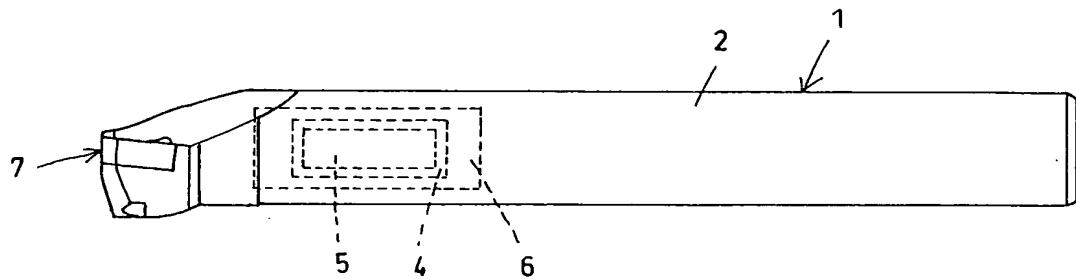


Fig.25

| | Size of pocket | | Result of cutting | |
|----------------------------|----------------|-------------|----------------------|----------------------|
| | Width (mm) | Height (mm) | Cutting conditions 1 | Cutting conditions 2 |
| Example 1 of the invention | 20 | 13 | ○ | ○ |
| Example 2 of the invention | 15 | 10 | ○ | ○ |
| Comparative Example 1 | 20 | 20 | × | × |
| Comparative Example 2 | 20 | 8 | ○ | × |
| Comparative Example 3 | 10 | 10 | ○ | × |
| Comparative Example 4 | Steel shank | | × | × |

Fig.26(a)

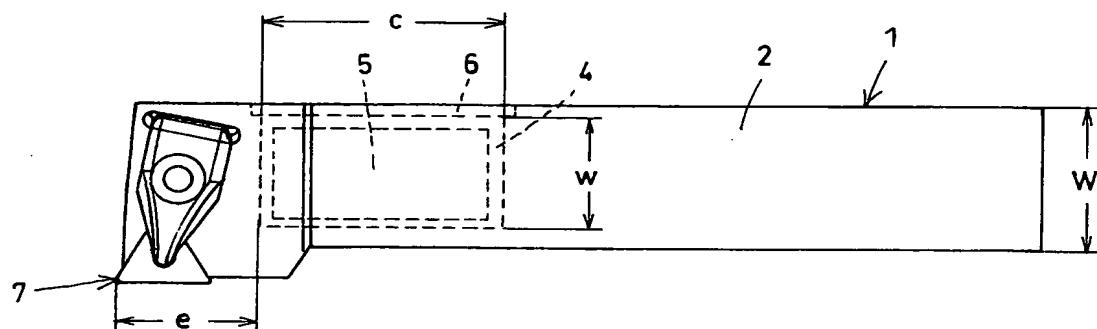


Fig.26(b)

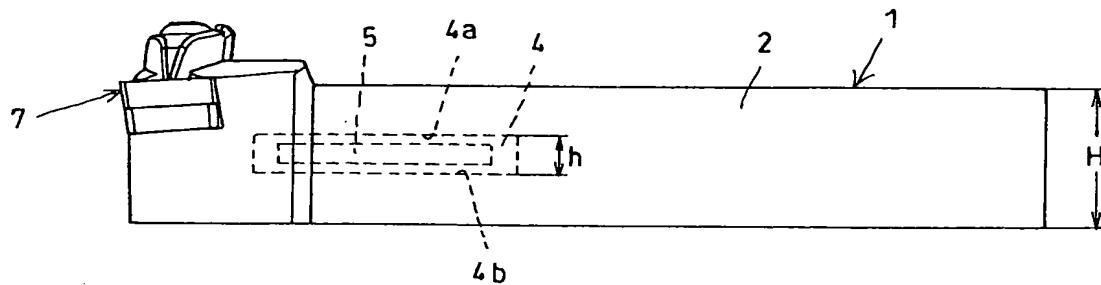


Fig.27(a)

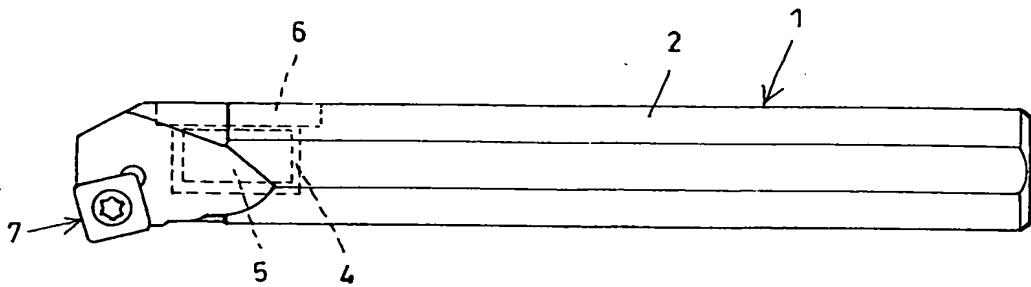


Fig.27(b)

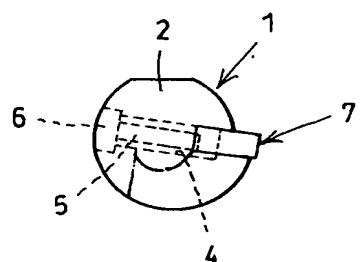


Fig.28

| | Size of pocket | | Number of impacts until breakage |
|----------------------------|----------------|-------------|-------------------------------------|
| | Width (mm) | Height (mm) | |
| Example 1 of the invention | 22 | 3 | 1950 |
| Example 2 of the invention | 14 | 5 | 1800 |
| Comparative Example 1 | 22 | 1.2 | 550 |
| Comparative Example 2 | 22 | 10 | 640 |
| Comparative Example 3 | Steel shank | | 600 |

Fig.29

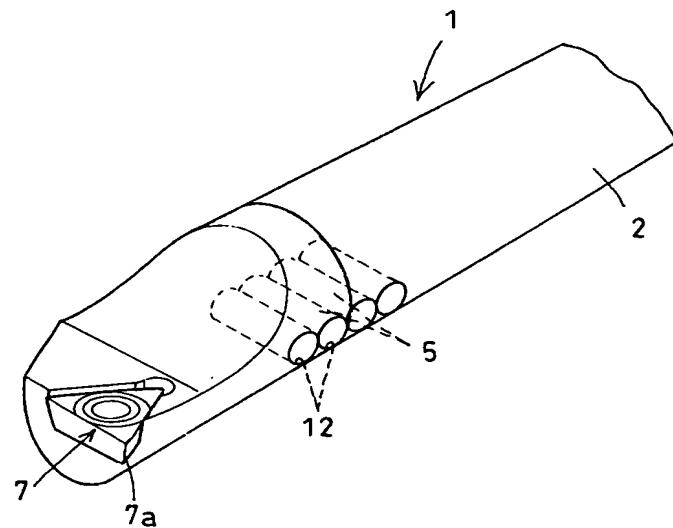


Fig.30(a)

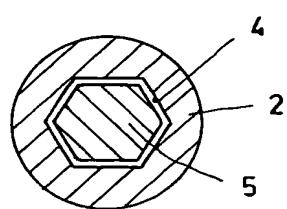


Fig.30(b)

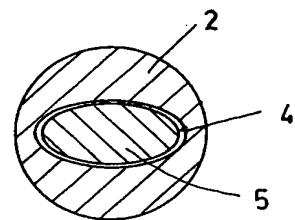


Fig.30(c)

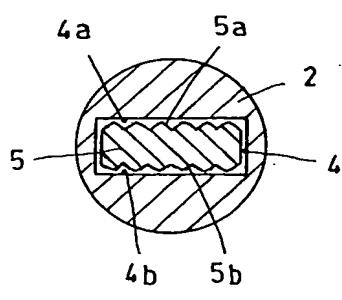


Fig.30(d)

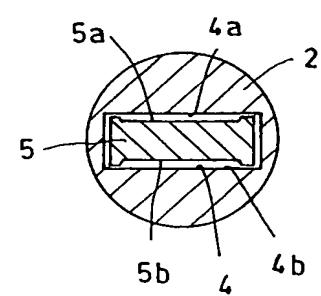


Fig.31

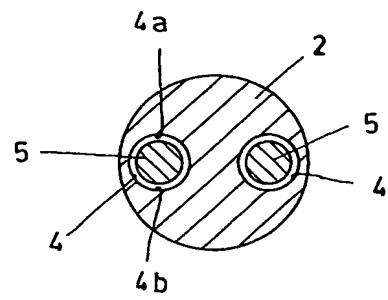


Fig.32(a)

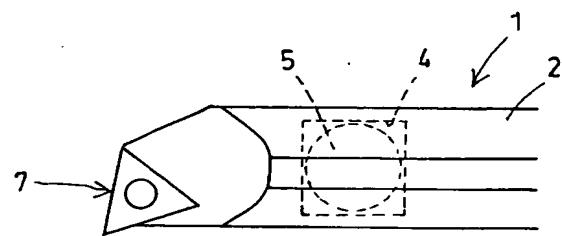


Fig.32(b)

